

WORCESTER medicine

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Research in Worcester: Changing the Landscape of Medicine



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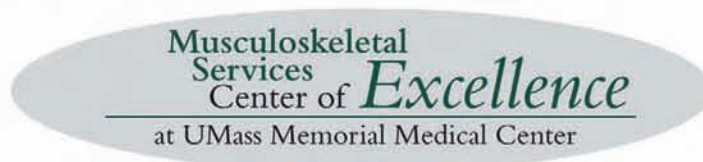
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Bruce Karlin, MD

When asked why I feel so passionately about organized medicine, I simply review our programs. Our forums are shaping up to be yet another success for the Medical Society. The forum on Retail Based Clinics was a fine example. This forum, the second in our series, brought together a cross-section of the medical community with students, residents, administrators, practitioners and the President of the Massachusetts Medical Society. We heard William Ryder, counsel at the MMS, present the input from the MMS that put significant patient protections into the enabling legislation. Dr. Peter Lindblad described how these clinics will affect our practices. Mary Philbin

suggested approaches that physicians might take to mitigate the adverse impact of these clinics. Not only did the discussants bring considered viewpoints and intelligent information to the discussion, but the audience was also intelligent and engaged. The level of the discussion made me proud of our profession. I felt like we had returned to the time when doctors still spent time at the hospital and congregated at lunch for discussions of medical issues. I hope that the continuing series matches the high level set by this program.

Since the electronic medical record is the lynchpin of the Obama Healthcare initiative, we need to develop our thoughts to share with those who write the legislation. A forum, possibly our next, on EMRs could help us crystallize those thoughts. Since most electronic systems are proprietary, the ability to transfer between systems is a problem, connectivity regulations notwithstanding. I fear that the problems of connectivity rob electronic health records of most of their promise. Further, I would love to hear feedback about the culture changes in the offices that have adopted electronic records. Does this change improve efficiency?

While we debate these important issues about healthcare, it is comforting to know that others focus on research that will lead to new treatments. This issue of Worcester Medicine highlights research in Central Massachusetts. Since we last visited this subject, one of our Central Mass researchers has received a Nobel prize.

Bruce Karlin, MD
President

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contents

Vol. 73, No. 2

MAR./APR. 2009

4 President's Message

Bruce Karlin, MD

6 A Message from the President of the Massachusetts Medical Society

Bruce S. Auerbach, MD

7 Editorial

Paul Steen, MD

9 Promoting the Commonwealth's Economic, Scientific, and Healthcare Engine

Kevin O'Sullivan

10 A Focus on Healing

Robert Finberg, MD

12 The Meyers Primary Care Institute: 13 years later...

Jerry H. Gurwitz, MD

14 "Collaborative Excellence"

Phillip D. Zamore, PhD

16 A Brief Tour of Worcester's Medical Research in the Pre-Modern Era

Thoru Pederson, PhD

18 Clinical Research and Publication with Trainees Fellows, Residents and Medical Students

David H. Spodick, MD

20 Clinical Trials: The Opportunity To Have Tomorrow's Medicines Today

Charles Birbara, MD

22 Legal Consult

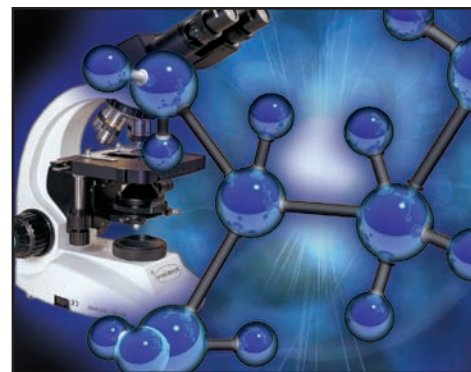
Peter J. Martin, Esq.

24 As I See It

Hugh Silk, MD

25 Financial Advice for Physicians

Carole Cohen



On the cover:

Research in Worcester:
Changing the Landscape of Medicine

26 Off Call

Harvey Fenigsohn

28 In Memoriam

Lubov Blinder, MD, PhD
Saul K. Dopkeen, MD
Fawzi A. Pualwan, MD

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A Message from the President of the Massachusetts Medical Society



Bruce S. Auerbach, MD

Dear Colleagues of the Worcester District:

On my way home from the Annual Oration, I was thinking back on the event, as well as on the last of your forums, which I also attended. The Worcester District is truly exemplary. You are incredibly vibrant. Your members are engaged and participatory. Your educational offerings are timely and high quality. You have provided an impressive array of leaders to our Society and to organized medicine in general. As the current President of the larger organization to which you belong, I am proud of you.

Over the years, there has been debate about the continued value of District Medical Societies within MMS. If anyone were to look for an effective way to make districts work, they would need to look no further than to the Worcester District.

Congratulations and keep up the stellar work.

Bruce S. Auerbach, MD
President
Massachusetts Medical Society

WORCESTER DISTRICT MEDICAL SOCIETY 213th ANNUAL ORATION

Monitoring Competence and Enhancing Performance:
Effective Ways to Support the Practicing Physician

ORATOR: Richard Aghababian, MD Associate Dean for Continuing Medical Education, UMass Medical School
Wednesday, February 11th, 2009 at 5:30pm at the Beechwood Hotel, Worcester



photo: (L-R) Wendy L. Gammon, M.A., M.Ed., Richard Aghababian, MD, Sophia Bogdasarian, RN, BSN, OCN, and Steven Grossman, MD, PhD

Research in Worcester

Paul Steen, MD



Paul Steen, MD

We are fortunate to live in a state that is recognized for its leadership in medical research. We are twice blessed being in Worcester, which is finally getting the recognition it deserves as a leader within the state for its research programs and activities. This issue looks more closely at Worcester's research endeavors from the viewpoint of our research leadership.

David Spodick talks about a model of research that involves students, residents and fellows and the benefits that are derived from this model. Charles Birbara discusses his experience with clinical trials and how the process has matured since he first began conducting them. Finally, we conclude with Thoru Pederson's fascinating history of research in Worcester. It is surprising how much has been done in our community over time.

I think you will come away from this issue with a new respect for the accomplishments of the researchers within the Worcester community of medical researchers.

Taking a look at the articles within our theme starts with Kevin O'Sullivan's discussion of the risks to our state retaining its lead in biomedical technology and what we can do to see that those risks are minimized. Robert Finberg takes a detailed view of his institution's impressive research agenda. He also describes a major new initiative called Advanced Therapeutics Cluster (ATC) that will expand their capability to move research from the laboratory to clinical testing. Jerry Gurwitz from the Meyers Primary Care Institute talks about their innovative model for a new academic and community-based research institute. He discusses the steps that led to the development of this enterprise and a sampling of the research that has been the outcome. Phillip Zamore debunks the image (if it ever really existed) of the solitary scientist of old and replaces it with a newer, more productive collabora-



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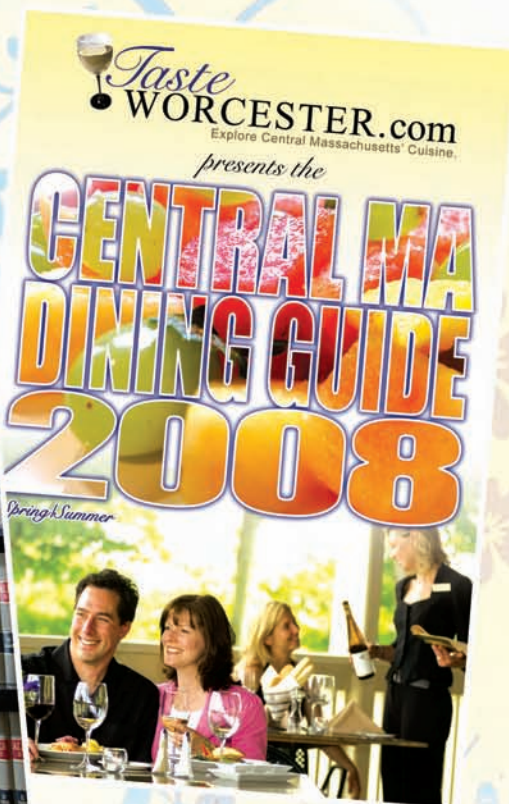
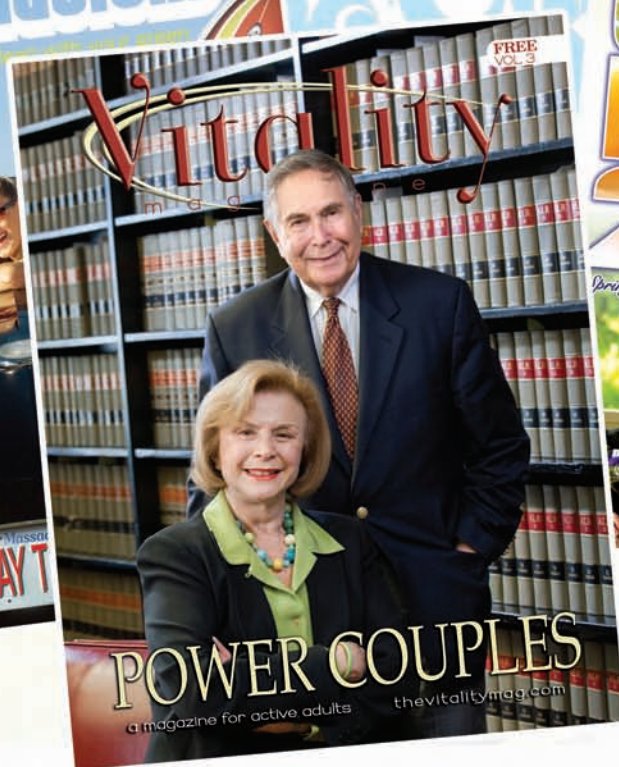
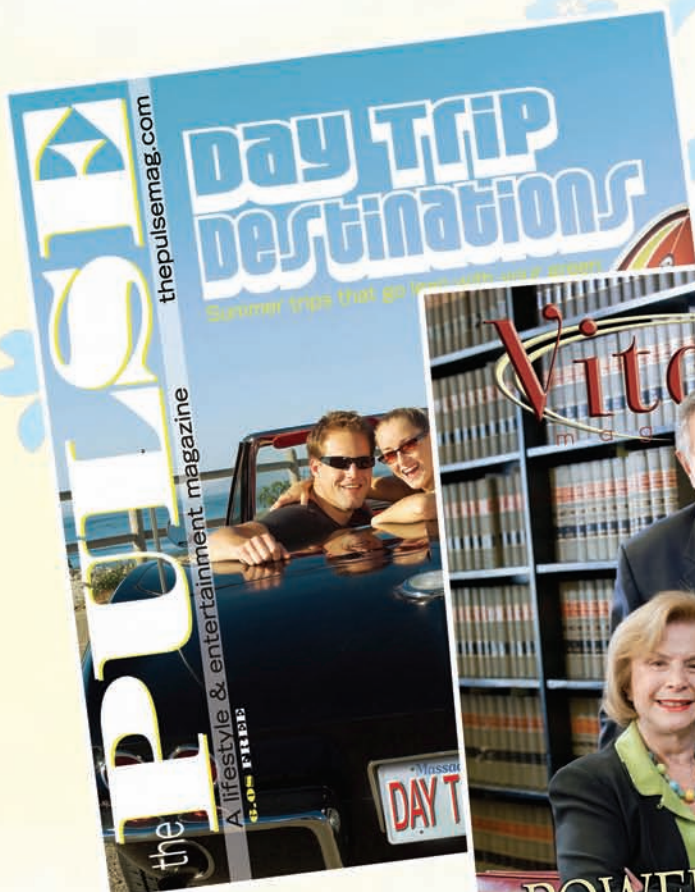
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Promoting the Commonwealth's Economic, Scientific, and Healthcare Engine by Enhancing Research in Worcester: Changing the Landscape in Life Sciences Medicine

Kevin O'Sullivan



Kevin O'Sullivan

Massachusetts is recognized as one of the leading biomedical technology states in the country. Our research, development and healthcare capabilities have enabled us to be at the forefront of innovation within this highly competitive field.

We all agree that the medical life sciences industry holds tremendous potential for our future. But other states and nations are nipping at our

heels. The Commonwealth's competitive advantage is diminishing somewhat as businesses and talent are increasingly attracted to other locations. At the BIO 2007 convention in Boston, dozens of regions aggressively targeted our companies and our talent and, as Governor Patrick has suggested, these regions are luring away our best and brightest, and want what we have.

Other states have invested money in funding research and development. Other states have invested in stem cell facilities and research. The current H-1B visa shortage also threatens our ability to attract the world's best and brightest.

That is why the Massachusetts's Life Science agenda and, in particular, the Massachusetts Life Sciences Center is so important: it helps to expand healthcare initiatives as well as create tax incentives for Life Science companies doing business here in Massachusetts. Benefits of the Life Sciences in turn include new jobs and the attraction and retention of the best scientists in the world. We also maintain our research and healthcare excellence through federal grants and patents and strengthen our investments in education and workforce training. Most importantly, we continue to strive to find cures, lifesaving medical therapies, and, ultimately an enhanced standard of living throughout the entire world.

Medical Life Sciences benefits our entire state, especially the burgeoning "Biomedical Corridor" anchored by

Boston/Cambridge and Worcester. Allowing for advances in scientific research at hospitals and academic institutions, life sciences also create new bio-manufacturing and scientific lab opportunities as well as technician jobs for people in all regions of our state.

As a result, we ensure that the Commonwealth maintains its preeminence in the healthcare field. By improving business incentives to attract and retain the best talent, the Massachusetts Medical Life Sciences agenda enhances the flow of discoveries that lead to new products, jobs, economic growth, and, most especially, specific cures. Thus, companies will grow their operations in Massachusetts and healthcare access will continue to improve for all of our citizens.

The establishment of the Massachusetts Human Embryonic Stem Cell Registry here at UMass Medical in Worcester is one example of a comprehensive and extensively documented international cell database, and the first phase of this broader Massachusetts initiative. This web-based registry provides Massachusetts researchers and commercial entities, as well as the international biomedical research and healthcare communities, with access to critical information on cell lines to facilitate the commercialization of science and greater development of research.

The Worcester region has continued to grow our life science cluster and is recognized as a major anchor to the biomedical corridor between Worcester and Cambridge. The Governor and our Central Mass Legislative Caucus have been extremely forward thinking in proposing and embracing new healthcare and life science initiatives and reform, and we in the life science cluster are certainly grateful for their efforts. The future for Medical Life Sciences within Worcester and Central Massachusetts is bright and the potential is boundless. Working together will ensure that we remain the best in the world.

Kevin O'Sullivan is President and Chief Executive Officer of Massachusetts Biomedical Initiatives, Inc. in Worcester; he can be reached at kosullivan@massbiomed.org.

A Focus on Healing

Robert Finberg, MD



Robert Finberg, MD

Imagine generating new insulin-producing cells to treat diabetes, or stopping the toxic proteins that cause Alzheimer's, then growing replacement nerve cells to reclaim memory and restore cognitive function. Cancer could be attacked from within by robbing tumor cells of their deadly ability to multiply unchecked. Stem cells could be grown into cardiac cells to repair a damaged heart. Cystic fibrosis, hemophilia and other diseases could be cured

by adding back working copies of the missing genes whose absence gave rise to the illness.

These are the sorts of therapeutic interventions envisioned by UMass Medical School (UMMS), where we are embarking on a major new initiative that will dramatically expand our school's "bench-to-bedside" research efforts.

The initiative, called the Advanced Therapeutics Cluster (ATC), consists of three interconnected research foci: RNA biology, stem cell biology, and gene therapy. Its mission, to apply the knowledge emanating from the latest biomedical discoveries to develop new ways to treat disease, is as ambitious as it is timely.

The idea for a new therapeutic program at UMMS began to percolate around the time Dr. Craig C. Mello received the 2006 Nobel Prize for his co-discovery of RNA-interference (RNAi), which is a natural mechanism for blocking gene activity. Beyond its transformative impact on biomedical research, scientists soon realized that if the tools of RNAi could be used to shut down disease-causing genes, then RNAi could create a new class of drugs with potentially far-reaching therapeutic applications.

As our Medical School began to more fully develop its clinical and translational research programs, it was a logical decision to

take advantage of the RNAi discovery, as well as the world-class concentration of RNA biologists that exists on campus, to develop new drugs using the technology.

Events in 2007, however, prompted a broadening of the RNAi therapeutics program into something more comprehensive, exciting and transformative. First, Governor Deval Patrick laid the framework for the ten-year, \$1 billion Massachusetts Life Sciences Initiative, a major thrust of which was the expansion of stem cell research and infrastructure.

Then, our Medical School welcomed new leadership with the arrival of Dr. Michael F. Collins as chancellor and Dr. Terence R. Flotte, an internationally renowned gene therapist, as dean and provost; together, the two formed a strategy to take advantage of the "life sciences moment" in Massachusetts. With that confluence of factors, the dynamic ATC vision, which we are now aggressively implementing, took shape.

The ATC's three research programs ~ the RNAi Therapeutics Institute, Gene Therapy Center and Center for Stem Cell Biology and Regenerative Medicine ~ will each consist of an interdisciplinary group of research faculty who will be co-located with other researchers and clinicians with synergistic interests, to promote novel approaches to the development of innovative therapeutics.

The transformative potential of the ATC is grounded in the strong interrelationship between the cluster's three programmatic elements. RNA biology, stem cell biology and gene therapy all function at the genetic level of biology and have different but complementary capabilities for targeting the underlying causes of disease. The cluster's programmatic strength, therefore, lies in its flexibility to mix and match these technologies and apply them as appropriate for a particular disease.

If a disease is caused by a protein that should not be produced, or one that is produced in excessive amounts, then an RNAi-based drug could intercept the flawed message, prevent protein production, and cure the disease. If a severe mutation erases a

gene's information and a disease arises, then gene therapy tools could insert a good copy of that gene back into the body and fix the problem. If part of the body is damaged by trauma or disease, then stem cells could be manipulated using RNAi to re-grow the damaged tissues, perhaps even a whole organ, and restore the lost function.

The ATC's research teams who will pioneer these approaches will be housed within a new facility, the Albert Sherman Center, which received \$90 million from the Commonwealth's Life Sciences Initiative. The 500,000 square-foot Sherman Center will be built on the northwest corner of the Worcester campus and will cost approximately \$449 million. When complete, the ATC will include some 80 new faculty researchers

with 700 scientific and support staff, most working in the Sherman Center.

The facility is scheduled to open in early 2012, but the work of the ATC has already commenced. Last March, Guangping Gao, PhD, a leader in gene therapy technology, was recruited from the University of Pennsylvania to be the founding director of the ATC's Gene Therapy Center. Current searches for the leaders of the RNAi Therapeutics Institute and the Center for Stem Cell Biology and Regenerative Medicine are active and attracting outstanding candidates. And the ATC's stem cell bank and registry initiatives are operational on the school's Shrewsbury campus.

While much of the current work around the ATC is focused on budgets, programs,

designs and recruitments, the overarching motivation for developing this initiative continues to be about healing patients. The ATC, as a tangible representation of hope, presents our Medical School with an incredible opportunity ~ and responsibility ~ to translate the promising basic science discoveries made over the last few years into new and effective treatments for patients.

Now is the time. Worcester is the place. And the ATC is the vehicle from which the Medical School will make medical breakthroughs.

Robert Finberg, MD is Chair of the Department of Medicine at the University of Massachusetts Medical School.

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The Meyers Primary Care Institute: 13 years later...

Jerry H. Gurwitz, MD



Jerry H. Gurwitz, MD

In the 1990s, a visionary group of Central Massachusetts physician leaders and medical school faculty formulated plans to develop an innovative model for a new academic enterprise — a community-based research and educational institute that would bridge the interests of Fallon Clinic, Fallon Community Health Plan, and the University of Massachusetts Medical School. In 1996, the Meyers Primary Care Institute was formally established in memory of

Dr. John Meyers, who had chaired the initial meetings leading to the creation of the Institute. Dr. Meyers had served as President of Fallon Clinic from 1966 to 1982, and as the first President of Fallon Community Health Plan.

Over the past 13 years, the Meyers Primary Care Institute has competed successfully for millions of dollars in research funding from federal and foundation sources and has initiated numerous research studies and educational programs. The Institute participates in various national research networks including the HMO Research Network, the Cancer Research Network (funded by the National Cancer Institute) and the Cardiovascular Research Network (funded by the National Heart, Lung and Blood Institute). The work of the Meyers Primary Care Institute has gained national attention in the media and has been cited in several influential reports from the Institute of Medicine, our nation's most trusted source of information and advice concerning health and science policy.

A sampling of research findings that have emanated from the Meyers Primary Care Institute follows:

Patient Safety: Some of the most widely cited national estimates concerning risk for adverse drug events and medication errors

have been derived from work conducted at the Meyers Primary Care Institute. For example, it is estimated that every year, 1.9 million drug-related injuries occur in the Medicare population in the course of outpatient care, including 180,000 life-threatening or fatal injuries; 50% of these may be preventable. In the nursing home setting, 86,000 life-threatening or fatal adverse drug events occur every year, of which 70% may be preventable. These findings have prompted more recent efforts to study computerized interventions to improve medication safety in ambulatory and long-term care settings.

Children: In the outpatient setting, medication error rates are even higher among pediatric patients with cancer than they are for adult patients. Errors with home medication use are especially common. Improving communication between health care providers and parents of children with cancer about medication administration is an essential step toward preventing such errors.

The Patient-Centered Medical-Home: A key element to providing optimal care to patients with chronic disease is effective communication between primary care physicians and specialists. Research undertaken at the Meyers Primary Care Institute has identified important gaps in lines of communication between generalists and specialists and has served to encourage development of the medical-home practice model to address these challenges.

Physician-Patient Communication: In one of the first studies to empirically investigate patients' views on medical errors and physician disclosure, Meyers Primary Care Institute researchers determined that full disclosure increased patient satisfaction and trust, and reduced the likelihood of changing physicians. In addition, full disclosure did not increase the likelihood that patients would seek out legal advice in the event of a medical error.

Cancer: Many breast cancer survivors do not undergo annual mammograms. Improving surveillance programs for breast cancer survivors will require enhanced cancer survivorship programs employing automated reminder systems and increased involvement by primary care physicians.

Disparities in Healthcare: Among insured patients with colorectal cancer, black patients have significantly lower survival rates than other patients. These disparities may be caused by racial differences in the receipt of cancer prevention, detection, and treatment services.

Diabetes Mellitus: Cognitive impairment may be an unrecognized complication of type 2 diabetes mellitus, which may have important implications for diabetes management and self-care in this growing population.

Heart Disease: Hospital survival rates from acute myocardial infarction have improved dramatically over the last 30 years — from 81% to 91% — due to improvements in the utilization of effective cardiac therapies.

Pregnancy: In the largest study to evaluate medication use among pregnant women in the United States, researchers at the Meyers Primary Care Institute found that nearly half of pregnant women are prescribed drugs for which there is no evidence of safety during pregnancy in humans.

Osteoporosis: Over 40% of newly diagnosed women with osteoporosis fail to initiate treatment. The decision to initiate treatment is strongly dependent on the patients' belief in the effectiveness of therapy and some patients' distrust of medications.

Health Policy: Medicare Part D, the drug benefit for Medicare beneficiaries, has been the largest expansion of the Medicare program since its inception in 1965. Investigators at the Meyers Primary Care Institute have participated in research efforts that show that the Part D benefit has reduced medication nonadherence related to the cost of drugs. However, older patients with multiple chronic conditions and those with mood disorders remain at very high risk for nonadherence to pre-

scribed drug regimens, despite the availability of the Part D benefit.

Drug Marketing Practices: Free drug samples remain a major component of the pharmaceutical industry's marketing strategy. Most physicians report that their main motivation in providing free samples is to reduce costs for low income patients. Institute investigators have reported that nearly 50% of Medicare beneficiaries, including many with higher incomes and adequate drug coverage, access free drug samples.

The above selection of research findings strongly suggests that the vision of Dr. Meyers and his colleagues is being fulfilled. The Institute has pursued numerous research and educational initiatives that have benefited the practice of medicine and the patients we all serve. Over the coming years, researchers and educators from many different disciplines will continue to work together at the Meyers Primary Care Institute to address the most important health-related challenges facing our communities and our nation.

Jerry H. Gurwitz, MD is the Dr. John Meyers Professor of Primary Care Medicine at the University of Massachusetts Medical School and Executive Director of the Meyers Primary Care Institute, a joint endeavor of Fallon Clinic, Fallon Community Health Plan, and the University of Massachusetts Medical School.

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“Collaborative Excellence”

Phillip D. Zamore, PhD



Phillip D. Zamore, PhD

Success often comes down to who you know. This is perhaps more true in experimental biomedical research than typically appreciated. The image of the scientist toiling away in lonely isolation has little relevance to modern molecular biology and perhaps was never really true even for the historic greats; for instance, Mendel worked alone, but sought the opinions of his genetics colleagues across

Europe. Scientists typically carry with them long mental lists of questions they would like to answer and experiments they would like to perform if only they had the technology to do so. Others have innovative plans for new methods, devices, or computer analytical techniques in search of the right biological problems to merit the effort needed to bring them to fruition. And at so many institutions, the scientist with the fundamental problem to answer and the scientist with the tools to answer it never meet. They don't join each other for lunch to talk science, don't attend their students' intramural seminars, don't have a drink after work to talk shop.

But at some Universities, they do meet, because their workplace design ensures they bump into each other, their matchmaking colleagues introduce them, and they read each others' papers and introduce themselves. I work at such a University.

My laboratory studies “small silencing RNAs” - whose functions include RNA interference or RNAi, the cellular pathway for which my colleague Craig Mello won the 2006 Nobel Prize. We seek to understand how these unexpectedly small RNAs turn genes off, allowing, for example, the cells of the immune system to differentiate into distinct lineages like B-cells and T-cells, how they fight viruses, protecting both plants and animals by attacking viral RNAs, and how they protect animal “germ cells” - the cells that make sperm and eggs - from endogenous parasites

called transposons. Much of our research is conducted in the very same fruit flies that Alaskan governor Sarah Palin disparaged. We use fruit flies because they accelerate the pace of our research - they produce a new generation every two weeks - and reduce costs - we can raise millions of flies for the same cost as housing and feeding a hundred mice. Remarkably, the small silencing pathways we study evolved at the dawn of animal life, more than 600 million years ago; some date back to the last common ancestor of plants, animals, and fungi, one billion years ago! Thus, small silencing RNAs are made and function the same way in flies as in mammals, so what we learn in flies has direct relevance to humans.

...Which takes us back to the issue of knowing the right people. I have many collaborations with my colleagues at UMass Medical School. For some, I'm the technologist bringing experimental solutions to my colleagues' scientific questions, typically elegant questions I wouldn't know enough to ask. In other collaborative journeys, my colleagues have the tools to help me and my students test hypotheses that but for my colleagues' help seemed impossible to vet. These collaborations have enriched my scientific life, propelled my research forward, and been tremendous fun. One collaboration, however, has helped me understand the frustration of patients and physicians alike with the long, slow path from biological discovery to disease therapy.

Nine years ago, Neil Aronin, my colleague and Chief of Endocrinology at UMass Medical School, approached me to ask if our work on a special class of small silencing RNAs called siRNAs could be used to turn off the defective gene that causes Huntington's Disease. Huntington's Disease is one of several invariably fatal human neurodegenerative disorders caused by the gain of a toxic property in a single gene. In contrast, most genetic diseases are caused by loss of a gene's function. Huntington's patients have one healthy copy of the huntingtin gene and one defective copy that causes the disease. As one good copy of the gene suffices for normal health, in theory, the disease could be helped by turning off the disease-causing version. Alas, translating theory to practice has been hard and slow, but we continue to find encouragement in our progress: we can now use siRNAs to protect mice for a few days from the effects of introducing the disease gene in a very artificial but experimen-

tally useful “model” of the human condition. We are now working to improve our methods in the hopes that they may prove sufficiently effective in mice to merit testing in non-human primates, the first step in the long road to developing a safe and effective treatment for any human disease.

...Which takes us back to what makes a great research greater than the sum of its parts: excellence in collaboration. None of our work in Huntington's Disease would have been possible without the carefully constructed UMass environment that fosters collaborations among faculty and among students, that makes it feel right and normal to approach a colleague in the hopes that a straightforward question will lead to a decade of collaborative research, and, with good luck and hard work, will make a difference in the lives of patients.

Phillip D. Zamore is the Gretchen Stone Cook Professor of Biomedical Sciences, an Investigator of the Howard Hughes Medical Institute, and Professor of Biochemistry and Molecular Pharmacology at the University of Massachusetts Medical School in Worcester, MA. He is also a co-founder of Alnylam Pharmaceuticals, Inc., a Cambridge-based biotechnology company that develops small RNA therapies for human disease, and a member of the board of advisors of the Massachusetts Life Sciences Center, which administers Governor Patrick's billion-dollar initiative in the Life Sciences. He can be contacted at: phillip.zamore@umassmed.edu

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A Brief Tour of Worcester's Medical Research in the Pre-Modern Era

Thoru Pederson, PhD



Thoru Pederson, PhD

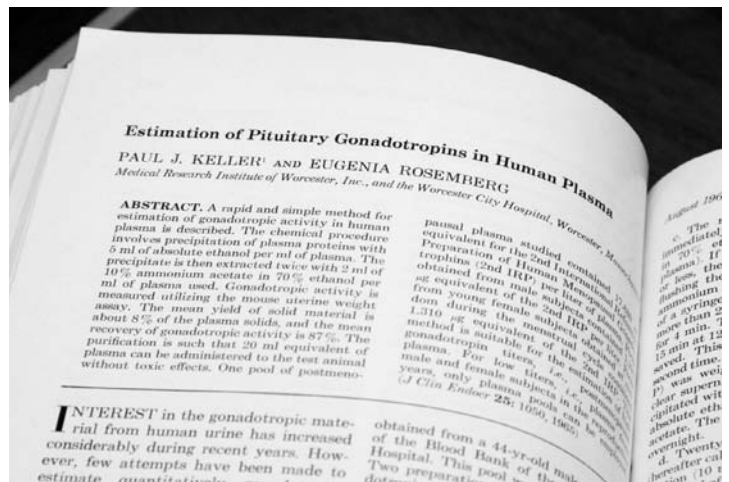
This will not be as erudite a tour as those that Stuart Jaffee, MD has led so ably over the years, visiting medically noteworthy sites in our town. The task I have been asked to undertake here is to highlight some of the medical research advances that have been made in and around Worcester. One would be tempted to start with the Charlton, MA dentist William Morton for his use of ether as a general

anesthetic, culminating in his famed 1846 demonstration in Boston. Although this had been discovered considerably earlier by Cleveland's Crawford Long, MD, Morton co-catalyzed ether's use by the medical profession. So let us respectfully accord him the first stop on this time-traveling tour.

All of Worcester's major hospitals opened their doors within 28 years of one another: Memorial (1868), Worcester City (1874), Worcester State (1877), St. Vincent's (1893) and Hahnemann (1896). Although many extraordinary and influential physicians practiced within those walls, clinical research was not a major theme in the early decades nor would it have been expected to be. In the post-World War II years, James B. Lee, MD set up a hypertension research laboratory at St. Vincent's, and the hospital's chief pathologist, Gilbert H. Friedell, MD, acquired one of the first electron microscopes in Worcester while also compiling a large database on cancer morbidity and mortality. In the 1960s at Worcester City Hospital, an outstanding endocrinologist, Eugenia Rosenberg, MD, developed an international reputation in research on pituitary hormones, particularly the gonadotropins. Meanwhile, Memorial Hospital became particularly well-known in surgery, with its reputation at a zenith under George R. Dunlop, MD ~ a master of technique and pedagogy in the operating theater who served as President of the

American College of Surgeons. But again, research as such was not a major institutional theme. A notable exception at Memorial was Roger W. Robinson, MD, who served as Chief of Medicine in the 1950s and carried out research on blood lipids well before the definitive demonstration of a link between circulating cholesterol and atherosclerosis.

As we sit and enjoy concerts and events, we should note that two of the subjects of portraits that (somewhat belatedly) adorn Mechanics Hall were pioneers in medicine (if not research per se) and, more poignant for those times, women. Clara Barton founded the American Red Cross, and her contrarian emphasis on treating wounded soldiers in situ rather than awaiting their evacuation was a major advance in battlefield medicine.



Dorothea Dix engineered, virtually single-handedly, a transformation that changed America's horrific asylums into safer mental hospitals, the first public one of which was our own Worcester State Hospital. There, at the turn of the century, the Swiss-born Adolf Meyer carried out research that advanced his concept of determining a mental patient's full contextual history (childhood, family, social etc.), something for which he was probably under-valued in American psychiatry. Later, Clark University's Hudson Hoagland conducted the first electroencephalographic measurements of psychotic vs. normal subjects in the 1940s, collaborating with the inventor Albert Grass of

Quincy, who brought out to Worcester State Hospital his prototype instrument, later famously known in medicine and physiology as “the polygraph” (and in forensics as “the lie detector machine,” one of the first scientific instruments to capture the interest of laypersons via Hollywood’s depiction of it in crime movies). Vitold Arnett, a local teenager from a poor Lithuanian immigrant family, had been hired by Hoagland to drive his lab equipment from the Clark campus to Worcester State Hospital and was eventually used as a normal subject. Recalling this 60 years later, Dr. Arnett (Hoagland had gotten him a scholarship to Clark and Arnett then went on to medical school and a private psychiatry practice in Manhattan) said he was wired up and then asked his boss a penetrating question: “Dr. Hoagland, should I be feeling an electric shock all over as is happening to me right now?” Dr. Arnett continued, “Dr. Hoagland replied, ‘No, that’s normal.’” Well, the essence of research is to learn more and improve things. And how about informed consent in those late 1930s?

Perhaps nowhere in medicine did Worcester play a more prominent role than in the fields of endocrinology and reproductive biology, thanks to two Clark University scientists ~ the aforementioned Hudson Hoagland and his partner, Gregory Pincus. From their initial founding of the Worcester Foundation for Experimental Biology on the Clark campus in 1944 to migrating to Shrewsbury in 1947, they ~ together with M.C. Chang ~ ushered in two revolutions in reproductive biology: the Pill and in vitro fertilization (in animals, the direct antecedent to human IVF). In addition, the Worcester Foundation’s Oscar Hechter pioneered a method of adrenal perfusion that constituted a major advance the field of steroid hormone metabolism and was a boon to more than one pharmaceutical company. Although Hoagland, Pincus, Chang and

Hechter were not MDs, they are properly included in this account as their work was of exceptional medical and societal importance.

In the 1960s, after a protracted debate between the local medical community and both medical and political forces in Boston, it was agreed that the University of Massachusetts’ planned medical school (legislated in 1962) would be sited here, not further to the west, a general location which had initially been under consideration by some. Keys to this outcome included the persuasive voices of then Worcester District Medical Society President Hyman Heller, MD, and the internist Joseph A. Lundy, MD. The Medical School’s mission was to be a teaching institution, as indeed it has been, consistently earning high national ratings. It also soon became widely known in clinical expertise, at first in orthopedics due to the clinical excellence of Arthur M. Pappas, MD. Later, the Medical School took off in pre-clinical research. The most recent decade at the Medical School speaks for itself, with a Nobel Prize, a Lasker Award, and two memberships in the U.S. National Academy of Sciences, all bearing witness to the caliber of scientists the Medical School has attracted in recent years.

In his signature piece, the Mississippi guitar man Willie Lee Brown (1900-1952)

offered up a quintessential blues line: “Can’t tell my future, and I can’t tell my past.” Worcester can proudly recite the past ~ one of a determined and surefooted metropolis that has long outperformed many US cities on a per capita basis. Like Willie, we cannot know our future, but the present is clear: in medical research, Worcester is truly at the forefront today.

Acknowledgement: I am grateful to my friend Leonard J. Morse, MD for helping me with some details ~ which he delivered with his typical generosity and grace ~ from the years before I came to Worcester (in 1971).

Dedication: I wish to salute, with this article, Stuart Jaffee, MD ~ a legendary conductor of historical tours of medicine in Worcester, a man who has served the profession of medicine with distinction, and our community with love.

Thoru Pederson, PhD is the Vitold Arnett Professor in Department of Biochemistry and Molecular Pharmacology and Associate Vice Provost for Research at UMass Medical School; he can be reached at: thoru.pederson@umassmed.edu.

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Clinical Research and Publication with Trainees: Fellows, Residents and Medical Students

David H. Spodick, MD



David H. Spodick, MD

Investigation begins when physicians have significant questions about worthwhile subjects. In clinical medicine, these questions often arise from practice where observations from smaller or larger numbers of cases stimulate formal investigation. This was how I began over 50 years of investigation and publication: first a case of Still's disease (as a medical student), next two cases of tuberculous pericarditis (as a resident) with different kinds of progression, and subsequently — among other subjects — large series of patients with pericardial diseases and a wide variety of electrocardiographic studies. Most of these studies enlisted fellows, residents, medical students and occasional nurses; there are now book chapters, well over 500 articles, and many abstracts for scientific meetings with such colleagues, who nearly always become first authors.

Because medical people are scientifically and humanistically curious, it has been easy to recruit collaborators from hospital

staffs and from among medical students. Individual cases pique their interest, leading to case reports which, with guidance from seniors and with thorough literature searches, can be informative and stimulating. (Unfortunately, individual case studies are increasingly resisted by many journals.) Observations of sufficiently large case series can yield statistically useful diagnostic and therapeutic lessons. Both situations arise from mutually observed patients. For laboratory methods and results, where large retrospective and prospective series are always possible (in my case, electrocardiography and echocardiography), personal observations and theoretical and practical questions arising from daily practice have excited trainee and nurse collaborators who hunt down the material and make their own conclusions from the results to be added to and matched with those of their senior co-investigators. For the participants and the recipients of their work, careful observation, investigation of series, and publication are unparalleled educational tools roughly epitomizing the maxim, "If you want to learn something, teach it."

Examining and reporting clinical and laboratory experiences exercises minds, sharpens powers of observation and elevates levels of practice. Fortunately, thanks to computers, contemporary access to the literature has never been as thorough and easy to use, so that the trainee investigator gains depth and often becomes a budding expert on his/her subject. Although senior authors often write the papers, trainee collaborators have increasingly become full co-authors and thus learn from the discipline required to write reports for peer-reviewed journals. As a result, trainees and senior collaborators gain satisfaction from their mutual successes and, frequently, the body of knowledge is significantly advanced.

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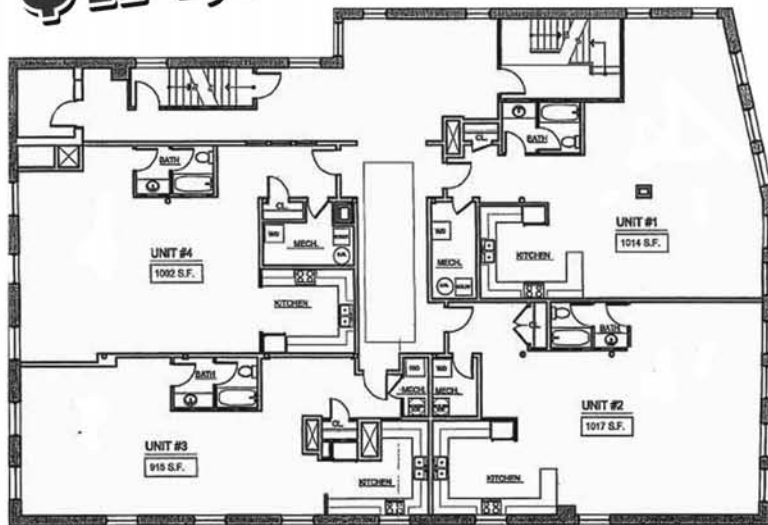
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Clinical Trials: The Opportunity To Have Tomorrow's Medicines Today

Charles Birbara, MD



Charles Birbara, MD

tually no pain, less joint swelling and was able to walk without assistance. By six months, she was enjoying an almost normal lifestyle despite the joint deformity in her hands and feet.

This story has a bittersweet ending. After a year in the trial, her husband developed cancer. For the next two years of his life, SHE was now able to be the caregiver, allowing him to die at home as was his wish. She remained in the trial for 5 full years, receiving medication and rheumatology care at no cost to her or her insurance carrier. When the drug Orencia, was approved by the FDA, she moved out of state to live with her daughter and is still being treated with this same medication, the cost now being borne by her insurance.

I have had the privilege of experiencing stories such as this many times over the past 10 years since the introduction of biologic therapies to treat not only rheumatoid arthritis, but also psoriasis, psoriatic arthritis, Crohn's disease, and ankylosing spondylitis. My research nurse, Mary Coughlin, and I started Clinical Pharmacology Study Group (CPSG) in 1989, though I

I would like to begin with a clinical trial that involved a patient of mine, Mrs. Smith. As with almost all of our studies, this trial was placebo controlled and double blind. Fortunately for her, Mrs. Smith appeared to randomize to the active medication, because within 6 weeks, her disease activity measures had all started to improve dramatically. By 10 weeks, she had almost no morning stiffness, vir-

The past 10 years, however, have clearly been the most exciting time of my medical career because of our ability to dramatically improve the lives of so many people with chronic inflammatory diseases which previously often resulted in a deteriorated physical state.

had been doing clinical trials since 1978. In those early years, most clinical research in rheumatology involved the use of NSAIDS and pain medications. In the mid-1990s, we became very involved with the COX-II inhibitors and at that time, our research staff started to grow. The past 10 years, however, have clearly been the most exciting time of my medical career because of our ability to dramatically improve the lives of so many people with chronic inflammatory diseases which previously often resulted in a deteriorated physical state. With a more concise understanding of the molecular and cellular basis of these diseases, we can now initiate targeted therapies to stop disease progression and occasionally even reverse tissue damage.

Advances are continually being made in our understanding of those physiologic "mechanisms-gone-awry" leading to disease states, and with that greater knowledge, new and possibly more effective treatment targets are being discovered. The goal, of course, is zero tolerance of any active disease: a cure! I am privileged to have been able to play the miniscule part that I have in the development programs of so many of our current and emerging biologic medications available to treat chronic inflammatory diseases. The ability to offer these medications to patients many years earlier than when approved for commercial use is really very exciting, especially when the clinical outcome is favorable.

I am often asked why someone should participate in a clinical trial. For the most part, these are patients who have failed available therapies to some degree. There are others who want to be involved with the search for more effective therapies which would help not only themselves, but also others with the same disease. The patients enrolled in CPSG trials come from local and distant places and from varying economic and educational backgrounds. Some simply do not have adequate insurance to cover the cost of needed care. Many are referred by study patients who have had a positive experience and know someone

else who might benefit. Others are well educated about their disease and are aware of "pipeline" medications being studied and seek us out in order to become involved. All our patients have one thing in common: they are all heroes. Without clinical trials, so many of our most effective medications would not be available to treat the myriad disease states which deprive us of the full enjoyment of living or even of life itself!

Because rheumatoid arthritis and several other inflammatory diseases which share a common pathologic basis are not homogeneous in the sense that not all patients respond similarly to the same medication, pharmaceutical companies are continually studying medications with different mechanisms so that more options would be available for those with a sub-optimal response to any given therapy. We usually do not know if a patient will have a sat-

isfactory response to any given medication, but with each new drug, we have another option. A noted rheumatologist once compared this to an artist who tried to paint a picture with only black on his palate so that the result could only be in shades of gray. With the addition color, however, his options for creativity were increased. I am convinced that the search for new and better medications will continue until we have a cure!

Charles Birbara, MD is Associate Professor of Medicine at UMass Medical School.

He is a rheumatologist in Worcester since 1970 and the Medical Director of Clinical Pharmacology Study Group (CPSG). CPSG is currently conducting trials in rheumatoid arthritis, osteoarthritis, psoriatic arthritis, psoriasis, Crohn's disease, gout, and fibromyalgia. He can be reached at cpsgworc@aol.com.

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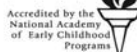
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New Pharmaceutical/Medical Device Manufacturer Market Conduct Regulations

Peter J. Martin, Esq.



Peter J. Martin, Esq.

Last summer, as part of a larger bill promoting health care cost containment, transparency and efficiency, the Legislature enacted new Chapter 111N of the Massachusetts General Laws, the Pharmaceutical and Medical Device Manufacturer Conduct law. That law required the Department of Public Health to promulgate regulations governing the marketing activities of such manufacturers that are at least as

strict as the voluntary codes of conduct adopted by PhRMA and AdvaMed. Now that draft regulations have been issued by the Department, now is a good time for practitioners to inform themselves about what are likely to be the new rules of the road in dealing with representatives of drug and device manufacturers.

One of the best-known provisions of the draft rules was a requirement for manufacturers to report to DPH any payment of \$50 or more to a physician or other prescriber. However, given those manufacturers' concerns about disclosure of trade secret information related to research and clinical trials, payments to physicians and others for "substantial professional or consulting services" rendered in connection with a "genuine research project or clinical trial" are not reportable.

It should be noted that these draft regulations essentially consider any payment by a manufacturer to a physician or other prescriber that falls anywhere outside this exception, which is specifically defined in the draft regulations, to be a payment made "in connection with . . . sales and marketing activities." Consequently, beginning July 1, 2010, all such payments are

reportable to DPH, and you may find yourself on a list in DPH's hands even if the "fee, payment, subsidy or other economic benefit" was not received in the specific context of sales and marketing.

Almost all of the draft regulations' requirements pertain to the manufacturers themselves rather than to health care practitioners, but there are a few provisions that could affect physicians, directly or indirectly. For example, any physician who sits on a formulary committee or a body that develops clinical guidelines and also is a consultant or speaker for a company must be required by the company to disclose to the committee or other body the nature of her relationship with the company, and must do so for two years after termination of the speaking or consulting arrangement.

This requirement (and its associated penalty for violation – up to \$5,000 for each prohibited transaction, occurrence or event) applies only to the manufacturer itself. However, a physician contemplating entering into one of these relationships with a manufacturer should be prepared to find this ongoing disclosure requirement in any contract with the manufacturer. The company may make the physician's failure to report her relationship with the company to the committee or other body an event of default under such an agreement.

The clear intent of the draft regulations is to govern, among other things, the activities of drug and device manufacturers' sales and marketing personnel. It should be noted in this connection that the statute under which the regulations were promulgated authorizes a counter-detailing program, in cooperation with Commonwealth Medicine at UMass Medical School, which "shall inform prescribers about drug marketing that is intended to circumvent competition from generic or other therapeutical-

One of the best-known provisions of the draft rules was a requirement for manufacturers to report to DPH any payment of \$50 or more to a physician or other prescriber.

ly equivalent pharmaceutical alternatives of other evidence-based treatment options.” This program is intended to involve face-to-face meetings between DPH-contracted physicians, pharmacists and nurses with physicians and other prescribers.

Physicians are growing familiar with the new prohibitions or limitations on receiving trinkets or meals from manufacturers. The draft regulations require that any meals be “modest and occasional,” offered only in conjunction with an educational presentation or in the presence of a marketing agent, provided only in a hospital or office setting, and not offered to the physician’s spouse or other guest. “Complimentary items” (pens, coffee mugs, gift cards) are permitted only as compensation for bona fide services. Payments to physicians for actual services rendered as a speaker, faculty organizer or academic program consultant for a CME event or educational conference must be reasonable, at fair market value, and compliant with applicable standards of the accredited CME provider.

The regulations do permit manufacturers to pay physicians “cash or cash equivalents” or “equity” as compensation for “bona fide services” which include consulting, research, participation on advisory boards, presentations at company-sponsored training or the licensing of intellectual property, where such arrangements are formalized in a written agreement based on the fair market value of the services or property. While the manufacturers have to meet several additional requirements regarding such arrangements, such as the legitimacy of its need for the services and a connection between the consultant’s expertise and the purpose of the arrangement, this provision appears to permit continuation, with some modifications, of certain relationships with physicians that have drawn scrutiny recently. These include partici-

pation on medical advisory boards or the licensing of intellectual property by physicians to medical device manufacturers.

Public hearings have been conducted in connection with these draft regulations, and there is sure to be more public discussion of their effect on both manufacturers and physicians. There will likely also be debate on proposed federal legislation covering similar topics. Assuming state

and federal health care reform initiatives continue with their emphasis on cost containment and transparency, these types of market conduct rules will continue to evolve and affect physicians, directly or indirectly.

Peter J. Martin, Esquire, is a partner in the Worcester office of Bowditch & Dewey, LLP, whose practice concentrates on health care and non-profit law.



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(Parts of this article were also printed in the MAFP newsletter in February.)

*Hugh Silk, MD, FAAFP
STFM Group on Oral Health
UMASS Medical School and Family Medicine Residency*

Hahnemann Family Health Center, Worcester, MA

Mortgages: What You Need to Understand

Carole Cohen

Recently, PIAM has made available the special banking and investment services of Boston Private Bank & Trust Company. One of its many services is the availability of residential mortgages. This article describes the recent changes in the mortgage lending markets.

Stand by the office water cooler or listen to the chatter at a cocktail party and you are likely to hear someone boast about recently refinancing their home into an historically low interest rate. At a time when many are worried about their employment and the losses they have experienced in their investment or retirement accounts, this is one bright spot: the chance to save thousands of dollars of interest over the life of your mortgage loan.

This rise in refinance activity seems to contradict reports in the media that have created the impression that loans, particularly jumbo loans, are either no longer available or are extremely high-priced.

There certainly have been changes in the residential lending climate, so let's try to sort through how the credit crunch has affected mortgage lending. The ability to purchase or refinance is predicated on three factors. The first factor is the amount of your down payment (for a purchase) or the outstanding debt in relationship to the appraised value (for a refinance). This is referred to in the mortgage industry as loan-to-value. The second factor is the borrower's credit score, and the third is the analysis of the amount of housing and other debt carried in rela-

tionship to income. In recent years, loans were granted in situations where there was little equity, income was not documented, and the credit history was checked. With a tightening of credit standards, you must now show strength in all three of these areas.

At this time there are two factors that most often prevent a refinance. The first is a decline in the value of the property. The second is the unwillingness of some second mortgage holders (equity lines or equity loans) to subordinate their lien so that the entity granting the new first mortgage can be the first lien holder. There is a great deal of confusion over current interest rates and the trend those rates may take. New reports and websites tend to quote mortgage interest rates in broad terms without defining any parameters. Loans for most counties in Massachusetts are now in three categories: loans at or below \$417,000, referred to as conforming loans, loans between \$418,000 and \$465,750, referred to as agency jumbos, and loans above \$465,751, commonly referred to as jumbo loans.

When you hear a "national average" or you see a rate posted on a website, it is most likely referring to the conforming loan amount of \$417,000 or less. The best rate is available to a borrower with a combination of a low loan-to-value, excellent credit score, and strong income. There are adjustments ~ or "hits" ~ to the interest rate quoted when any one of these three factors varies. It is also possible that in today's market a weakness in

one area can result in an inability to purchase or refinance a home.

The next category of loans ~ defined as an "agency jumbo" for loan amounts above \$417,000 but below \$465,750 ~ has an upward price adjustment that can add anywhere from .50% to 1.0% to the conforming rate quote. The third category, jumbo loans, has its own set of products and interest rates. Unlike the first two categories of conforming and agency jumbo loans ~ which are still actively being purchased by agencies like Fannie Mae and Freddie Mac ~ there is little if any ability to sell these jumbo loans to third parties. Most jumbo loans are currently being originated and serviced by banks. Interest rates for a jumbo 30 year fixed rate loan are significantly higher than either of the two aforementioned categories, but there are attractive adjustable rate mortgages at significantly lower rates.

Whatever your needs are, it is important to speak with someone who can help you navigate through the process. There are many options to consider and factors to take into account. Boston Private Bank has both conforming and jumbo lending capability and will be happy to answer your questions and assist you with your financing needs.

Carole Cohen is Senior Vice President in the Residential Mortgage lending area at Boston Private Bank. She has over 30 years of banking experience. Please visit the website at PIAM.com to learn more about the services Boston Private Bank can offer.

The Power of Representation and the Self-Image of Physicians: A Historical Perspective

Harvey Fenigsohn

On September 17, 2008, the eminent Yale historian of medicine, John Harley Warner, spoke at the University of Massachusetts Medical School on the way the visual arts have been used to represent the evolution of the physician's image in American society. At an event co-sponsored by Lamar Soutter Library's Office of Medical History and Archives and the Humanities in Medicine committee, Warner, Yale's Avalon Professor and Chair of the History of Medicine Section, presented examples from photography and art to illustrate his lecture "The Image of Modern Medicine: Professional Identity and Visual Culture in America at the Turn of the 20th Century." Professor Warner argued that images adopted by physicians helped establish their cultural authority and determined both the public's view of the profession and their view of themselves.

Professor Warner explained that at the turn of the twentieth century, just as the medical profession began widely invoking the methods of scientific experimentalism in education and practice, some of its most elite practitioners worried that the profession was abandoning its ties to the older, humanistic tradition of the cultured gentleman. A counter-tradition was created whereby elite physicians such as William Osler created libraries of classic texts in medical history and posed for photographs in oak paneled, book-lined reading rooms. Rather than depict themselves as inhuman scientists working in sterile laboratories, Osler and his followers chose to represent themselves as cultured, if amateur, scholars deeply committed to humanistic learning and the historical traditions of medicine.

In contrast to this image of physicians as scholarly bibliophiles, Professor Warner disclosed another, more private view of the medical world in photographs of students posed around cadavers in gross anatomy labs. Frequently photographed along with their cadavers in rakish poses, the students seemingly made

light of the dissections to mitigate the emotional impact of their assignment. The corpses on the dissecting tables sometimes bore labels such as "Her loss is our gain," or "Rest in pieces, a martyr to science." New students were hazed and, as they were initiated into the rites of passage of medical education, even made to waltz with the cadavers and skeletons.

These rituals persisted at least through the 1920s. By mailing to family and friends postcards of themselves grouped around the dissection table, the students broadcast their newly emerging professional identities. As Professor Warner noted, medical students' responses to their gross anatomy lessons reflected their yearning for intense aesthetic experiences, a reaction against what seemed to them an increasingly over-civilized society. He argued that the study of anatomy remained the most antiquated and the most unchanged subject of medical education. In contrast to the modern laboratory, a dissection table offered the students a kind of primal encounter with the immediate and the primitive, something less accessible through their other courses of study.



John Harley Warner

Professor Warner noted that bodies for dissection could not be obtained legally until the 20th century, and even then regulations for the use of cadavers varied from state to state. Body snatching and grave robbing were common. The subjects of the dissections often were African Americans corpses secretly procured without permission of the families of the deceased. At times, the bodies of lynch victims appeared in the photographs, graphically reminding the Worcester audience of the grim history of racism in America.

By the 1920s, however, physicians and hospital administrators tried to project an image of professional competence by presenting themselves as scientists surrounded by gleaming micro-

scopes and other impressive laboratory instruments. The sleek architecture of hospitals and photographs of stark X-ray images emphasized the modernity and scientific power of medicine. Men (and occasionally women) in starched white coats were pictured as highly skilled technicians with the technical knowledge of a prestigious profession. In stressing their regard for empirical evidence and scientific experimentation, physicians once more abandoned both the homespun look of the family doctor and the genteel image of the cultivated humanist.

Yet, in another example of how powerful images of physicians continued to uphold their esteem in American society, Professor Warner described the uses to which the well-known Victorian painting "The Doctor" (1887), by the British artist Sir Luke Fildes, was put by 20th century American physicians. The painting depicts a concerned physician keeping watch over his patient, a child in bed. The child seems to glow in an almost heavenly light, while her worried parents are cast in the gloomy background. Enormously popular, more than a million copies of the painting appeared in doctors' waiting rooms. In 1911, "The Doctor" became the subject of a film by Thomas Edison, and in 1933 the painting was viewed by at least 5 million people when circulated in a pharmaceutical company's travelling exhibit.

Burnishing the image of the medical profession, the ubiquitous reproductions of "The Doctor" epitomized the role of the kindly, caring healer. Fildes' painting came to serve a polemical purpose when the U.S. Congress unsuccessfully attempted to pass a national health insurance bill between 1943 and 1948. The bugaboo of socialized medicine was vig-



orously opposed by the American Medical Association, which contended that personalized care giving, such as that depicted in "The Doctor," would be threatened by an impersonal government bureaucracy. AMA propaganda warned against a fascist national health system, and advocated keeping politics out of medicine. In 1947, the image of the private, compassionate physician was once again brought to national consciousness when the U. S. government issued an AMA commemorative postage stamp depicting "The Doctor."

Professor Warner accompanied his final comments with slides from the art of Norman Rockwell, at mid 20th century perhaps the nation's most beloved illustrator. Rockwell's familiar paintings expressed America's nostalgic yearning for a small town community of decent, upright citizens. His sentimental, patriot-

ic illustrations appeared on the cover of the popular *The Saturday Evening Post*, and included scenes of a folksy, avuncular family practitioner treating his grateful patients. Once again, a widely disseminated image of physicians portrayed qualities they wished to embody, and to have Americans accept as authentic.

In the question and answer session following the lecture, the UMass infectious disease specialist Dr. Richard Glew, who trained at Johns Hopkins and who also co-teaches the History of Medicine elective with historian Dr. Ellen More, commented on his own memories of dissection room anatomy lessons. Dr. Glew recalled that group photographs of students surrounding a cadaver were no longer in vogue when he attended medical school. Considerably more respect was shown toward the deceased and their families, just as our medical school now conducts a service honoring those donating their bodies to science. However, he also recalled the persistence of gallows humor among his own cohorts, enabling students to cope more easily with the inevitable anxieties they felt in dissecting the corpses of fellow human beings. Thus, Professor Warner's lecture stimulated his audience of medical students and physicians to reflect on historical images of themselves and their professional identity through time.

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WDMS Remembers Its Colleagues

Lubov Blinder, MD, PhD
1938 - 2008

This is an obituary for Lubov Blinder, MD, PhD, but it is also a romantic tale of deep yearning, effort, sacrifice and a loving marriage. Lubov, affectionately known as Luba, died on October 4, 2008 at the age of 70. She was quiet, humble and gentle; she was loath to talk of her extraordinary life and this memorial may help others realize what she accomplished during that life.

Luba met her husband Boris when she was eight and he was ten. She was memorable. Shortly after they met again when she was fourteen, he told her, "When I grow up, I'm going to marry you." She responded, "I'd like that." After receiving a gold medal in high school, she entered Moscow Medical School # 2, no small achievement for a Jewish girl in Moscow. Luba and Boris were married in her fifth year of medical school. When she graduated a year later, she was floridly pregnant with her son Dimetri..

Luba went to work in the Original Moscow Clinic, earning less than a postman. She saw patients, made multiple house calls and cared for her baby and her husband. She endeared herself to a director of a biologic research center who hired her. After more study and much hard work she earned a PhD in Biochemistry. At age 38 she and Boris made the daring move to leave Moscow; she abhorred the Communist system and did not want her son to suffer living in it. She was immediately ostracized, shunned by her relatives and jobless.

After almost ten months, they left Moscow to begin an exodus into an unknown future. They went first to Vienna and finally to the United States of America in 1979. The Worcester Jewish Resettlement Agency did not know what to do with an MD and a PhD. Dr. Maurice Goodman came to the rescue and hired her as a post-doctoral laboratory technologist in the Department of Physiology at the University of Massachusetts Medical School. After work, Luba studied English and American medical textbooks relentlessly until she passed the licensure examinations. Health Stop in Medway, MA first hired her, then she moved to one in Worcester, then to Blue Cross-Blue Shield of Massachusetts; finally she joined Dr. Robert Maloney and his colleagues at Chadwick Medical Associates in Worcester. There her co-workers and many, many patients appreciated her scholarship, sensitivity, sincerity and honesty.

Luba Blinder never let her medical ambitions interfere with her love for her husband Boris, her son Dimetri, and her many close friends and relatives. She was an anchor for all of them and her encouragement and example inspired many of them to fulfill their dreams. Luba, we all miss you and will always remember you.

Ronald J. Dorris, MD

Saul K. Dopkeen, MD
1913 - 2008

Upon completing my residency in Pediatrics, I had the privilege of substituting for Dr. Saul Dopkeen while he was sidelined by illness. As result of that experience, "Dr. Saul" and I became colleagues throughout the duration of his long career in Worcester. Saul Dopkeen was a beloved pediatrician. He was soft-spoken, encouraging, indefatigable and devoted to his responsibilities. He was a very valued mentor to me.

Born and raised in Boston, Saul graduated from Boston Latin School, Boston University in 1935, and from Boston University School of Medicine in 1939. He traveled west to Worcester Hahnemann Hospital for his internship and to Boston City Hospital for residency training in Pediatrics. In 1943, he returned to Worcester, where he practiced pediatrics, serving as Chief at Worcester Memorial Hospital as well as an active member of the medical staffs of St. Vincent Hospital and Worcester Hahnemann Hospital. He became a member of the Clinical Faculty of the newly established University of Massachusetts Medical School. In the early 1950s, he was the first physician in Central Massachusetts to perform exchange transfusions for newborns with erthroblastosis fetalis.

He was a certified by the American Board of Pediatrics and a Fellow of the American Academy of Pediatrics as well as a member of the Massachusetts Medical Society and the New England Pediatric Society. Saul moved to Falmouth in 1980, and there he enjoyed a long retirement. He died on June 6, 2008.

Saul Dopkeen's interlude practicing medicine witnessed the birth of antibiotics in 1943, the conquest of poliomyelitis with the last major outbreak in Worcester in 1955, and the eradication of smallpox with the last recorded case in the world in 1979! He was the avenue through which these spectacular medical advances realized their promise to the many patients he so capably served. Saul Dopkeen was a solid foot soldier.

Arnold Gurwitz MD

in memoriam

Fawzi A. Pualwan, MD
1926 - 2008

The death of Fawzi (Fred) Pualwan on November 15, 2008 evokes memories of Worcester Medicine in 1961, when we both started our respective practices. It was then a medical world without HMOs, the ward services of Worcester assigned to cover the blood bank.

At that time, there were only 400 members of the Worcester District Medical Society, resulting in cohesiveness and collegiality, and in our surgical world Fred was among the friendliest and most cooperative.

Our practices intersected almost daily at four hospitals.

At Worcester City Hospital, Fred was noted for his excellent surgical care and his meticulous surgical technique. He enjoyed teaching the residents, often quoting Dr. Seymour Schwartz, the eminent Chief of Surgery at Strong Memorial Hospital. He was a student of his craft and his knowledge of the surgical literature was extensive.

As an illustration, I clearly remember one of his cases, a young woman with a ruptured spleen whom he successfully treated conservatively when the standard accepted practice at that time was an open splenectomy. Fred quoted the very recent literature and had the courage and patience to wait two weeks while just transfusing the patient.

It was at community hospitals such as Fairlawn and Hahnemann where I most appreciated his surgical skills, for at those places we covered for each other and scrubbed together. Fred was always willing to sacrifice his own time and expertise whenever I called upon him, and his assistance, night and day, making surgery easier for me and the rest of the surgical staff.

As his assistant at community hospitals, I particularly appreciated his vascular surgical skills, reflecting his training in Rochester under the famous British vascular surgeon Dr. Charles Robb, whom Fred referenced frequently.

Fred's surgical era is gone, but his significant contribution to Worcester surgery remains in the memory of all of us who worked with him and ~ most importantly ~ with the myriad of patients whom he served.

Burrill N. Josephs, MD

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